

**Further improving our understanding of the tax awareness,
tax literacy and tax morale of young adults**

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Abstract

Developed countries have for some years seen a policy direction of travel towards more individual responsibility to engage with taxpaying obligations, at the same time as more limited state support and assistance being provided excepting where taxpayers are motivated to self-serve online provision. This paper argues that a greater focus on tax education generally is needed given this change of approach to compliance, and particularly amongst younger people as they prepare to engage with the tax system beyond consumption taxation payment, to build a better platform for compliance improvement efforts in the future that are better suited to this greater focus on individual responsibility for compliance. As such, the need to better understand the most effective way to do educate young people about the tax system is also required. This paper seeks to contribute to the development of this understanding. It presents quantitative research into socio-demographic influences and the impact tax tuition may have on young adults' tax morale. The results of a two-staged survey show gender, tax tuition, and employment experience significantly influence tax morale. The contribution to the literature on tax morale and tax literacy is showing, through regression analysis, the effect of tax tuition on tax morale is negatively influenced by employment experience.

Key words: tax, compliance, tax morale, tax literacy, tax education, work experience

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1. Introduction and context

In the OECD Report, *Building Tax Culture*, it is recognised that global society is ‘witnessing a transformation of state-citizen relations and a cultural shift in tax administration’ (OECD 2015, p17). Resources directed at improving taxpayer education and facilitating a greater appreciation for individual contribution to nations are deemed to be cost-beneficial in improving taxpayer compliance, particularly cost effective voluntary compliance (Loo, Hansford, and McKerchar, 2005). Tax authorities, once reliant on a fear-culture (e.g. fear of being caught and penalised), increasingly recognise citizens as allies, rather than mere ‘obligation holders’ (Aberbach and Christensen, 2007; Gangl, Hofmann, and Kirchler, 2015). That said, cultural-shifts are slow and the public perception of tax authorities in many countries will take time to move from one of coercion and repression, to one of partnership, co-production and alliance (Alford, 2009; OECD, 2015; Currie, Tuck and Morrell, 2015).

The underlying objective of taxpayer education (i.e. educating taxpayers in all matters related to assessment, compliance and understanding of tax collection and administration) is to ‘foster attitudes of commitment to the common good, emphasising the social value of tax and its link to public expenditure’ (OECD 2015, p17). A common aspect of recent taxpayer education initiatives in various countries is to highlight the detrimental impact of tax evasion and aggressive tax avoidance. Taxpayer education is most often achieved by combined development of tax awareness (knowledge of tax principles, of how taxes operate and are charged, and how payment is enforced)

and tax literacy (the ability to apply knowledge to comply with the principles and operational rules of a tax system) (OECD, 2015).

In her discussion on external factors influencing internal motivations, Kornhauser (2007) states ‘education can strengthen norms that are positively correlated with tax compliance such as honesty, morality, national pride, concern for others, and fairness’ (Kornhauser 2007, p 619).

The OECD (2015) undertook a global survey of various tax education programmes and initiatives finding that many countries specifically target school children and/or university students, the objective being to raise the tax-literacy of young adults before they transition into the labour market. This has recently been followed with the publication of the ‘Report on Tax Morale, What Drives People and Businesses to Pay Tax?’ (OECD, 2019) extending details of what principles are underpinning tax education programmes in developing countries. One of the policy considerations for individuals centres on support for tax education programmes (OECD 2019, p 3).

Tax education also forms part of national curricula in the UK at secondary level as part of compulsory financial education programmes now required of all state-maintained secondary schools however, the impact of general programmes of financial education, including taxation, and of these specific HMRC produced and supported learning tax materials, is still poorly understood, and particularly so in terms of their longer term impact on behaviours. In a recent survey conducted by Deloitte LLP, the researchers found generally low levels of very basic tax knowledge in the UK (Deloitte, 2019). Further, they found tax knowledge to be robustly and positively associated with perceptions of fairness in the tax system, and willingness to pay more tax (tax morale) (Deloitte, 2019).

Beyond formal education within schools, very little directed tax education occurs for most people throughout the remainder of their lives (unless they seek to become professionally qualified in related fields of work). Taxpayers are largely left to self-educate as needed, with limited support from HMRC other than via their website and some increasingly limited face-to-face or telephone services, or have to buy access to others knowledge where this can be afforded and is available (Deloitte, 2019).

General tax awareness within the UK is further hindered by the very nature of the tax system itself (Lymer, 2015). The majority of UK residents, who are typically employed and/or hold modest savings and investments, do not need to file self-assessment tax returns given the personal and investment exemptions and the precision of Pay as You Earn (P.A.Y.E.) withholding on their earnings. As such their direct engagement with income taxation is at best limited. Further, with rising personal allowance levels (a fourfold increase since 1990/1 when the level was £3,005, to current level of £12,570 (Finance Act 2021), increasing numbers don't have to pay income taxation at all (from a peak of 32.5 million income taxpayers in 2007/8, 800,000 less people – particularly women/those under the age of 65 - are expected to pay income tax in 2020/21, HMRC, 2022). Further, many do not think of VAT and other indirect taxes as 'true' taxes it seems, but instead simply as part of the cost of purchases made (Gemmell, Morrissey and Pinar, 2003) – so do not often feel their purchasing behaviour includes them amongst taxpayers if they aren't income taxpayers.

Conversely, it behoves the self-employed to be tax-aware from the outset of the formation of their businesses. The digital economy is facilitating the move to more adjunct and self-employment (De Stefano, 2015). According to the UK's Office for National Statistics (ONS), there has been an increase in the number of self-employed workers by approximately 40% since the turn of the

century based on the information published by the ONS (ONS.gov.uk). With an increasing number of individuals engaging in trade in lieu of employment, tax education will play an important role in the personal and professional development of upcoming entrepreneurs. Further, with *Making Tax Digital*, the UK's HMRC-led programme to move most tax interactions with the UK Government into a digital mediated form in the near future, commencing in earnest for all VAT registered businesses since 2019.

On this basis as outlined above, it is becoming ever more an imperative to raise the levels of financial and tax literacy before young people leave school and higher education. Beyond this point there are limited opportunities for the collective development of core understanding and awareness of tax systems and taxpayer obligations from which desired behaviours of voluntary compliance are likely to naturally develop and through which the development of greater levels of tax citizenship capability can evolve that will provide the context for an improved public debate about the evolution of tax systems for the national good.

This paper contributes to the growing literature on the nature and form of effective taxpayer education, particularly amongst young people, by making an original contribution on the moderating influence of initial experiences of work on tax literacy and tax morale. We report findings from an empirical study conducted in the UK and funded by the Chartered Institute of Taxation (CIOT) in which we considered the financial and tax literacy of 377 young adults from two UK universities, the socio-demographic influences on their tax morale and their perceptions of tax administration and compliance.

The remainder of this paper is structured as follows. Section two outlines the context for the research and relevant professional and academic literature is discussed to extend the motivation for

this work further. Section three provides details of the quantitative research methodology used in this study. The fourth section summarises the findings of the quantitative research. Finally, conclusions, policy recommendations and suggestions for the further research and outreach are offered in Section five.

2. Review of the Literature

This section reviews existent literature outlining our current understanding of why tax education is needed and what impact it may have on tax morale, with a particular focus on young adults as the subject of this paper.

2.1. Consideration for tax education at the genesis of tax morale research

A role for suitable taxpayer education to aid the building of a compliant taxpayer community was evident from the earliest of formal studies into tax compliance. Allingham and Sandmo (1972) established the benchmark economic model of tax evasion in which self-interested taxpayers decide how much income to declare with reference to a trading-off of the benefits (i.e. lower tax payments) and costs (i.e. detection and punishment) of tax evasion. This model ‘is a straightforward application of the Becker (1968) model of crime to the tax-evasion context: risk-averse individuals weigh the utility benefits and costs of evasion to optimise their compliance behaviour’ (Luttmer and Singhal 2014, p151). Therefore, under this model, tax education could be deemed to be necessary to enable taxpayers to suitably determine their trade-off decisions aiding understanding of the full implications of their possible decisions to avoid tax payments they may otherwise make. While this was a path-breaking model when introduced, it has since been widely criticised by many authors as provided only a limited view on the motivations for individual tax compliance. (e.g. Alm, 1991; Alm, 1992; Frey and Feld, 2002; Torgler, 2007; Torgler Schaffner and MacIntyre, 2010; Barone

and Mocetti, 2011; McKerchar, Bloomquist and Pope, 2013; Brink and Porcano, 2016; among others).

Alm (1991) provided a survey of early theoretical and experimental research into taxpayer compliance. He recognised that the underlying expected utility theory in which taxpayers ‘pay taxes because they fear detection and punishment’ could not explain all compliance behaviour. He found relatively high compliance in spite of the very low possibility of audit and the fractional penalties on unpaid tax liabilities, surmising that enforcement activities alone could not explain taxpayer reporting. The other factors recognised by the author that may be influencing taxpayer compliance included valued government expenditures and social norms. These other compliance motivating factors have become collectively titled ‘tax morale’ by later literature. Tax morale is simply defined as the *intrinsic motivations for individuals to pay taxes* (Alm and Torgler, 2006; Frey and Torgler, 2007; McKerchar et al., 2013; Onu, Oats, Kirchler and Hartmann, 2019; among others). Alm (1991) concluded with a call for an exploration of alternative theories of behaviour with regard to taxpayer compliance that paid greater attention to these other ‘tax morale’ factors and as such the role of effective taxpayer education needed to be revisited to address these apparently wider motivations for compliant behaviours than simple detection/penalty avoidance would suggest. The literature on tax morale thus began to grow.

2.2. How to measure tax morale

“The question about tax morale has more to do with why people do not cheat rather than why they do” (Torgler, 2002, p658). This explains why tax compliance attitudes are often used as proxy for measuring tax morale in the literature. Tax compliance is the full payment of all tax obligations (Braithwaite, 2009), so by extension, tax non-compliance occurs if not all tax obligations are paid.

According to Torgler (2003), evasion is an indication of a lack of intrinsic motivation to pay tax (i.e. low tax morale). The measure of tax morale may be a single question as to the degree to which tax evasion may be justified, a series of questions that provides a more robust analysis through indexation or factor analysis, or more complex assessments of perceived fairness of tax systems and the legitimacy of governments (Lewis, 2009).

Prior researchers (Torgler, 2003; McGee and Tyler, 2006; Alm and Torgler, 2006; Torgler and Schneider, 2007; among others) have used data from World Values (WV) and European Values (EV) Surveys in considering key determinants of tax morale. The question posed in WV and EV surveys that is commonly used in academic literature for determining tax morale is:

Please tell me for the following statement whether you think it can always be justified, never be justified, or something in between. Cheating on taxes if you have the chance (10 – never, 1 – always).

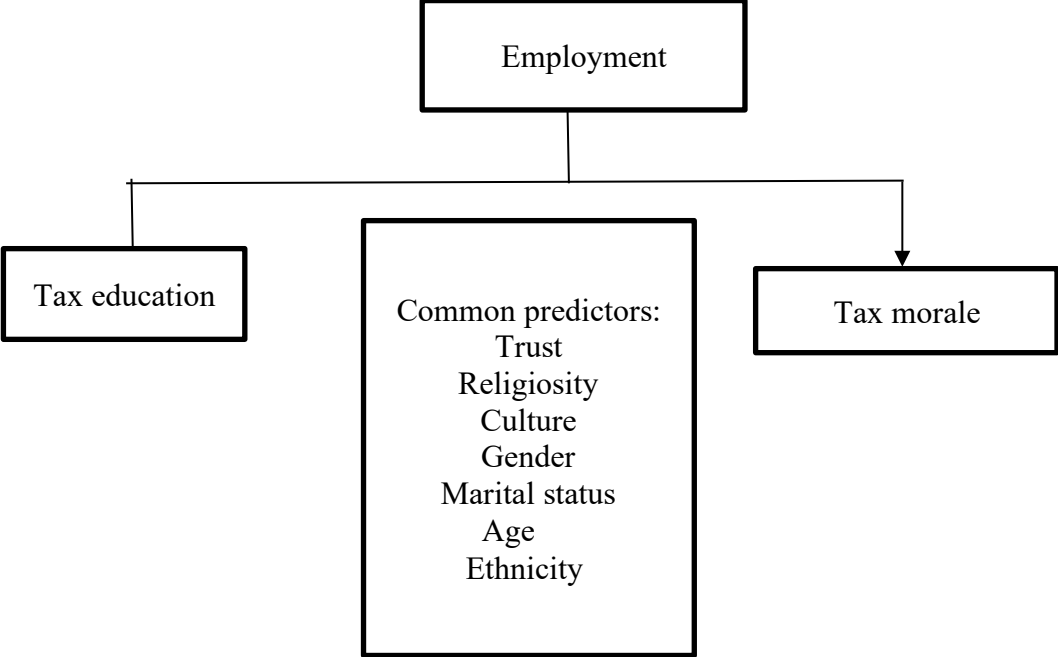
McGee established a comprehensive set of 18 questions representing 15 historical and three contemporary issues and the three points of view found in tax evasion ethics literature: (1) duties to pay the states, (2) an anarchist view and (3) evasion, both ethical and unethical, under specific circumstances (McGee, 2006). McGee recognised that as the vast amount of literature considered tax evasion from a public finance perspective, his contribution would be to focus on the ethics of tax evasion. He conducted a number of surveys using these 18 questions in various countries involving university academics (McGee, 2006), university students (McGee, Nickerson and Fees, 2005; McGee and Bernal, 2006; McGee and Tusan, 2008;) and citizenry (McGee and Tyler, 2006). Many of these questions have been used, with some modifications, in subsequent surveys by other researchers including Torgler (2007), Wong and Lo (2015), among others.

The tax morale literature is now extensive. Torgler et al. (2010) provided a review of the early literature (1960 through 2000) that considered various theoretical considerations including an altruistic approach (e.g. Chung 1976), the Kantian morality approach (e.g. Laffont, 1975; Sugden, 1984), and social customs (e.g. Gordon, 1989; Akerlof, 1980; Naylor, 1989; Myles and Naylor, 1996). Kornhauser (2007) provided a review of the next wave of literature (2000 through 2007), which further developed the theories and concepts established in the earlier literature. Her review considered the tax morale research in three major areas: cognitive and affective processes (e.g. Kahan and Braman, 2006; Cullis, Jones and Lewis, 2006; Hansen, 2003), social norms and personal values/norms (e.g. Kolstad, 2007; Fehr and Fischbacher, 2004; Mazar and Ariely, 2006) and demographic factors (e.g. McGee and Tyler, 2006; Torgler, 2003 and 2006; Hasseldine, Hite, James and Toumi, 2005).

The body of literature has grown significantly since Torgler's seminal work in the 1990s. Horodnic (2018) provided a systematic review of tax morale literature using an institutionalist lens, recognising the explored determinants (with the exception of socio-economic characteristics) of tax morale may be characterised as belonging to either formal (e.g. authorities) or informal (e.g. social-norms) institutions. Trust has been found to be the most salient factor and this is with regard for horizontal (peer) and vertical (authorities) trust (Horodnic, 2018).

The figure below provides a visual illustration of the estimates and relationships that we aim to explore.

Figure 1: Estimates and Relationships of Tax Morale Explored in this Research



The evolving tax compliance literature has focused on identifying determinants of tax morale, exploring TRUST and equity in various forms, RELIGIOSITY, and CULTURE. Also often considered (commonly as control variables) is the relationship between tax morale and sociodemographic and economic factors (e.g. age, GENDER, MARITAL STATUS, EDUCATION, income, etc.) (Rodriguez-Justicia and Theilen, 2018).

Torgler and Murphy (2004), among others, have found that TRUST in government supports tax morale. In their research into the framing effects of tax morale statements in such surveys, Alexander and Balavac-Orlic (2022) found that while more trust in government results in higher tax morale, the effect is significant only when the framing of the statement or question is negative.

With regard to GENDER, many have considered how tax morale may differ and have consistently found women displaying higher levels of tax morale to men (Alm and Torgler, 2006; Doerrenberg

and Peichl, 2013; D'Attoma, Volintiru and Malezieux, 2020; Alexander and Balavac-Orlic, 2022; among others¹).

AGE is another common variable in the tax morale literature with older people displaying higher levels of tax morale (Torgler and Murphy, 2004; Alm and Torgler, 2006; Doerrenberg and Peichl, 2013; among others).

When MARITAL STATUS has been considered in the research, married people have a higher tax morale than singles (Torgler and Murphy, 2004; Alm and Torgler, 2006; Doerrenberg and Peichl, 2013; among others). McKerchar et al. (2013) did not find the effect to be statistically significant.

RELIGIOUSITY has been found to be a significant determinant of tax morale by several researchers (Torgler and Murphy, 2004; Alm and Torgler, 2006; Doerrenberg and Peichl, 2013; among others). Conversely, it has made no difference according to Torgler 2006 and McKerchar et al., 2013. It was observed that a more secular origin might be taken in future research to re-iterate religiosity and personal integrity (McKerchar et al., 2013).

CULTURE has been found to have an impact on tax morale with differences detected within and between countries (Alm and Torgler, 2006; Brink and Porcano, 2016; D'Attoma et al., 2020; Torgler and Murphy, 2004; Doerrenberg and Peichl, 2013; among others).

Regarding INCOME, some studies find it has a positive effect on tax morale (Konrad and Qari, 2012), and others report a negative effect (Alm and Torgler, 2006; Doerrenberg and Peichl, 2013). Similarly ambiguous is the estimated effect of EDUCATION on tax morale (for a review, see

¹ See Horodnic (2018) for a systematic review of the literature.

Rodriguez-Justicia and Theilen, 2018). The following sections focus on the literature on these two variables of interest.

In sum, previous studies have found those more likely to have lower tax morale are younger people, male, unemployed, or in low-income or undeclared employment. Horodnic (2018) and others suggest these might represent target groups for policy measures related to awareness campaigns and/or target with suitable tax education to seek to address their otherwise sub-optimal tax compliance behaviour from the perspective of the wider society.

2.3 Tax education in recent tax morale research

Education has been considered as a potential influencing factor in many of studies on tax morale, but mostly in the form of levels of formal education and not in terms of tax-specific education. General education, as a common control variable in previous research, has yielded mixed results. Some argue that improved education (both tax specific and other general education levels) enhances tax compliance. It is purported that better-educated individuals should have a greater understanding of tax law and fiscal connections (e.g. state-provided benefits and services funded by tax revenues) and therefore should be more tax-compliant (Lewis, 1982; Torgler, 2007; Lewis, Carrera, Cullis and Jones, 2009). The counter-argument is that better-educated individuals have a greater awareness of possible government waste and have an added advantage of understanding opportunities for evasion and avoidance (Torgler, 2007). Given these two alternate perspectives on education, there should be due consideration for the empirical evidence on its effects on tax morale and tax compliance.

In the works of Torgler (2003), McGee and Tyler (2006), Cullis et al. (2006), Lewis et al. (2009) and others, the education variable was general in nature (e.g. school, university, post-graduate

studies). Relatively few have considered the impact of tax-specific tuition on tax morale. The exceptional studies were conducted by Erikson and Fallan (1996), Kasipillai, Aripin and Amran (2003), Goksu and Sahpaz (2015), Wong and Lo (2015) and Kurniawan (2020). These quasi-experiment and/or survey based studies are reflected in Table 1 and the five studies in which tax-specific education was considered are briefly discussed below.

Table 1: A selection of studies from 1996 to 2020 including education variables to explain tax morale.

Reference	Dependent Variable	Education as an independent or control variable	Sample and econometrics	Source of data	Findings
General Education					
Torgler (2003)	Tax Morale: responses to ten statements of tax evasion and to the World Value Survey Question on tax morale.	The respondents were asked for the highest level of education attainment.	Quasi- Experiment; surveys of university students and staff, 644 from an institution in Costa Rica and 1196 from Switzerland. Ordered Probit.	own survey	Education has a positive impact on tax compliance.
McGee and Tyler (2006)	Tax Morale: responses to 18 statements of tax evasion and to the World Value Survey Question on tax morale.	The respondents were asked for the highest level of education attainment.	Data extracted from 33 countries participating in a larger study on human beliefs and values. Mann-Whitney U Test.	human beliefs and values survey	Education has a negative impact on tax compliance.
Cullis et al. (2006)	Tax compliance: declarations of income given four differing scenarios of detection and penalty rates.	Participants pursuing degrees in psychology or economics were the subjects for the study and inferences were then drawn on the influence degree choice had on tax compliance.	Survey of 539 UK university students enrolled on psychology or economics courses. Factor analysis.	own survey	Tax compliance is influenced by individual differences (gender and the degree of study).
Lewis et al. (2009)	Tax compliance: declarations of income given four differing scenarios of detection and penalty rates.	Participants pursuing degrees in psychology or economics were the subjects for the study and inferences were then drawn on the influence degree choice had on tax compliance.	Survey of 505 Italian university students in two universities enrolled on psychology or economics courses. Factor analysis.	survey produced by Cullis et al. (2006) - slightly modified	Tax compliance is influenced by individual differences (gender and the degree of study).

Alexander and
Balavac-Orlic (2022)

Tax Morale: responses to seven
statements on tax evasion;
positively or negatively framed.

The respondents were asked for the highest
level of education attainment.

Survey of 630 US and UK public
and private sector employees.
Factor analysis

Selected
statements taken
from McGee
(2006) - slightly
modified

Higher levels of financial and tax
literacy increases tax morale and
moderates the effect of fairness
when negatively framed.

Reference	Dependent Variable	Education as an independent or control variable	Sample and econometrics	Source of data	Findings
Tax-specific Education					
Eriksen and Fallan (1996)	<p>Tax knowledge: responses to tax compliance questions (i.e. taxable income, allowances and tax liabilities);</p> <p>Tax Attitudes: questions relevant to others' evasion, self-evasion, other illegalities, and understanding of fairness of the tax system.</p>	<p>Tax tuition was the stimulus in the experiment group.</p>	<p>Quasi- Experiment; pre/post surveys of University students, 149 students were tested before tax tuition and 123 students were tested afterwards. Factor analysis.</p>	own survey	Specific tax knowledge improves tax ethics and perceived fairness.
Kasipillai et al. (2003)	<p>Tax compliance: behavioural responses to scenarios on personal tax compliance</p>	<p>Tax tuition was a pre-condition for the survey and inferences were drawn on self-perceived influence of tax education on personal tax compliance attitude. This study suffered from the lack of a control group.</p>	<p>Quasi- Experiment; pre/post surveys of University students, 553 students were tested before tax tuition and 551 students were tested afterwards. Descriptive statistics.</p>	own survey	Tax education has a positive influence on personal tax compliance and gender differences are not a factor in attitudes.
Goksu and Sahpaz (2015)	<p>Tax morale: responses to statements of tax evasion;</p> <p>Tax compliance: responses to statements on tax compliance and administration.</p>	<p>Tax tuition was a pre-condition for the survey and inferences were then drawn on self-perceptions of the impact tax education had on tax compliance. This study suffered from the lack of a control group.</p>	<p>Survey of 459 Turkish and Spanish students in two universities that received tax tuition. Spearman Correlation.</p>	own survey	Tax education in university has a positive effect on the level of tax morale.
Wong and Lo (2015)	<p>Tax Compliance: responses to compliance of given scenarios;</p> <p>Perceptions of Country's tax system: responses to statements on tax administration matters;</p> <p>Tax morale: responses to statements of tax evasion.</p>	<p>Tax tuition was a pre-condition for the survey and inferences were drawn on the influence of general or technical tax education on tax compliance attitudes, controlling for perceptions of the tax system and tax morale. Information was taken on work experience, but it was not considered in the econometrics.</p>	<p>Quasi- Experiment; pre/post surveys of University students, 205 students were tested before tax tuition and 205 students were tested afterwards. Factor Analysis.</p>	own survey including selected statements on evasion from McGee (2006) to determine tax morale	General tax tuition positively influenced tax compliance of undergraduates with regard to VAT, but not income tax. Tax technical tuition positively influenced tax compliance of postgraduates with regard to both VAT and income tax.

Kurniawan (2020)	<p>Tax Compliance: responses to query from lecturers, 'are they are compliant or not'; Tax Education: survey of students on 3 courses in which a tax module is required; Tax Knowledge: responses to theoretical and practical tax queries in the survey (not provided).</p>	<p>Tax education delivered by (mostly) nontax-specialist lecturers in one module common to students studying Accounting, Business Administration or Managerial Accounting undergraduate courses at a vocational state university in Indonesia. Information was taken on work experience, but it was not considered in the econometrics.</p>	<p>Mixed methods; surveys of 100 vocational state university students, followed by an interview with 2 students, 2 lecturers and 1 tax official. Descriptive statistics, determination coefficient testing and path analysis and Sobel testing.</p>	<p>Own survey (not provided)</p>	<p>Tax education had a significant (positive) effect on tax compliance of the surveyed undergraduates. The indirect effect of tax education though tax knowledge also significantly influenced tax compliance.</p>
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Eriksen and Fallan (1996) conducted a quasi-experiment that pre- and post-tested two groups of students from a Norwegian university on their tax knowledge and attitudes towards taxation. The experimental group of students (n=194) engaged in a tax law elective between pre- and post-testing while the control group did not. The tax law elective was considered the stimulus in the experimental group. The authors found that the experimental group of students who engaged in the tax law elective improved their tax knowledge significantly and changed their attitudes to tax evasion, whereas no such changes were observed in the control group, thus concluding the positivity of such tuition.

Kasipillai et al. (2003) undertook a survey study of Malaysian University students looking at the degree to which a formal tax education course as part of their University studies produced a self-reported change in tax compliance intention levels. Having applied surveys before and after tax tuition, they report that while both sexes reported higher compliance intentions, females were more significantly affected by having received formal tax education in this particular instance.

Goksu and Sahpaz (2015) surveyed undergraduate students at two universities, one in Turkey and one in Spain. Their survey had ten questions on tax morale and 12 questions on the students' perceptions of their respective countries' tax systems. The research only considered the differences between the two universities without controlling for any other factors (e.g. age, gender, work experience, etc). They simply speculated the differences of the cohorts being attributable social-culture structure, religious beliefs, economic or political factors. Taking specific questions, the authors explored correlations through Spearman Coefficient testing on their data, inferring a positive effect of tax tuition on tax compliance attitudes.

Wong and Lo (2015) considered how tax compliance might be improved through tax tuition. They surveyed undergraduate and postgraduate students enrolled in a Hong Kong university between 2008 and 2010 on one of three tax courses: general tax education (n=53) or technical tax course (n=68) at the undergraduate level versus an identical tax-technical course (n=80) offered at the postgraduate level. The students were asked to complete the survey at the beginning and the end of their courses to explore the impact the acquired tax knowledge had on the respective students' tax compliance decisions (tax morale). Their questionnaire had three sections: (1) tax compliance scenarios, (2) perceptions of the Hong Kong tax system, and (3) 16 statements about ethical attitudes regarding on tax compliance. The methodology applied included factor analyses of the 16 tax morale questions based on the characteristics of the tax systems and consequences of tax evasion, as well as the framing of the statements in which there was (or was not) an excuse for tax evasion. Wong and Lo (2015) concluded that general tax tuition (a broad range of topics, theories and principles) was sufficient to improve the sales tax compliance decisions of undergraduate students and the technical tax tuition improved the income tax and sales tax compliance decisions of the postgraduate students (p3). However, there was no significant relationship between the technical tax tuition the tax compliance decisions at the undergraduate level for either sales tax or income tax. The authors surmised that the 'content of the tax course and the educational levels of a program influence taxpayer's tax compliance behaviours in distinct ways' (Wong and Lo, 2015, p21). The control variables were gender, age and, for the postgraduate cohort only, work experience.

In a mixed-methods study by Kurniawan (2020), the influence of tax education and tax knowledge on individual tax compliance was considered. One hundred undergraduate students enrolled on three courses in an Indonesian vocational state university were surveyed² after they had completed

² The survey questions were not provided by the author in this paper.

a module in taxation. In addition to the survey data, qualitative data was collected from five interviews (two with students, two with tax lecturers and one with a governmental tax employee). Kurniawan (2020), while recognising the weakness inherent in asking individuals directly about their intentions to comply in the future, concluded that tax education had a significant effect on tax compliance. While information regarding the length of work experience was collected from the survey respondents, it was not considered in the descriptive statistics or regressions.

2.4 Work experience in tax morale research involving young people

Given the suggested importance of the younger, poorer demographic for policy measures in targeting awareness campaigns and tax education (see Horodnic, 2018), we also considered the impact of tax tuition undertaken by university students in this research. However, rather than just providing another country's set of descriptive statistics from which correlations may be deduced, we have performed some regressions to explore the possibility of a moderating influence of WORK EXPERIENCE on tax literacy and tax morale. Our hypothesis is underpinned by pedagogical theory of enhancing learning through work experience. Whilst studying the experiences of US school children, Hoffman (2015) purports that work experience provides individuals the power to exert themselves as more of a citizen in this world beyond their role in the family. We hypothesize that work experience instils a greater appreciation for taxation, which in turn would positively impact tax morale. The potential moderating effect of work experience on the relationship of tax tuition to tax morale of university students has not yet been considered in prior literature. As the sample populations in most earlier research transcend generations, the employment status variable has also been general in nature (e.g. unemployment, self-, part-time, full-time employment, retired, etc.).

With respect to the five research studies into the tax morale of university students noted above, only Wong and Lo (2015) and Kurniawan (2020) included work experience as a control variable, but neither offered any further consideration of this characteristic in presenting their results. In related literature, Chen and Volpe (1998) considered work experience as an independent variable in their study of financial literacy involving circa 1,800 USA college students, finding it to be significant.

Our study contributes to the literature specifically on tax morale and tax literacy by considering the moderating effect of work experience on tax literacy to tax morale. In the next section we outline how this literature informed the research methodology we adopted in our work.

3. Data and Methodology

3.1 Data

This paper is based on quantitative research undertaken in the academic year 2016/17. The research³ looked into the inter-relationships of tax literacy and tax morale of young people at university. Following Eriksen and Fallan (1996) and Wong and Lo (2015), this was achieved through a series of surveys administered before and after curricula-based tax tuition.

A total number of 377 surveys were completed in two universities in the autumn and spring semesters during the 2016/17 academic year. The students surveyed were enrolled on various courses (i.e. accounting, business and non-business courses). The control groups (i.e. business and non-business cohorts) did not receive any tax tuition in their respective courses, whereas the experimental groups (i.e. the accounting cohorts) received tax tuition during the academic year. The

³ This work was funded by the Chartered Institute of Tax

surveys were conducted at the beginning and the end of the academic year, before and after tax tuition relevant to the experimental group.

More than half (59.42%) of the students surveyed were from accounting cohorts and received formal tax tuition in their second year during spring term (2016/17). The other students surveyed were fairly evenly split between business majors (19.63%) and non-business majors (20.95%). These latter two groups of students comprised the control group by not receiving any formal tax tuition as part of their courses. Majority of students (250) were surveyed in the spring. Of the 127 students surveyed in the autumn (before receiving tax tuition), 97 were surveyed again in the spring (after receiving tax tuition). As the surveys were performed anonymously and independently of each other, the researchers are unable to identify the exact number of students that were surveyed twice, although the overlap will have been significant (Alexander, Balavac, Mukherjee, Massey and Lymer, 2019).

The literature outlined in the previous section provided the basis on which the surveys were created. Survey questions were largely drawn from the prior studies where some validation had therefore occurred and were used to create a survey instrument for delivery.⁴

As it has been recognised that responses to multiple questions on tax compliance/morale improves the validity of the measure (Frey and Torgler, 2007; Torgler et al., 2010), we chose to base the initial part of our survey on a selection of statements from prior validated research. These included 11 of the 18 statements in McGee's survey (2006) and 7 other statements posed in Wong and Lo's survey (2015).⁵

⁴ Further details on how this survey was constructed and applied can be found in Alexander et al. (2019).

⁵ The seven statements posed by McGee that we chose not to replicate in our survey concerned matters beyond the scope of this research. These included matters of extreme prejudice - corrupt politicians, financing unjust wars, and racial discrimination.

We made slight moderations to the terminology. Where the statements referred to ‘tax evasion’ in the works of McGee (2006) and Wong and Lo (2015), we chose to use ‘underpaying taxes’. Where the statements of McGee (2006) and Wong and Lo (2015) referred to an action that is ‘not unethical’, we chose to use the term ‘justifiable’, which is consistent with the WV and EV surveys. The framing of our statements was intentionally softened to allow students the opportunity to consider their responses without the impediment of the illegality of the action (evasion) or the social stigma of unethical behaviour.

The next subsection (3.2) summarises the descriptive and univariant statistics before we present our model (3.3) and its estimated results in section four and discuss the implications of these results further in the conclusion section (5) following thereafter.

3.2. Descriptive and univariate statistics

In terms of socio-demographic characteristics, just over half of the surveyed students were female (51.72%) and aged between 18-20 years of age (52.91%). Most were single (92.59%), white (74.87%) and were UK citizens (87.17%). Of the students surveyed, 44.15% were employed, and 28.18% reported to have completed an income tax return at some point prior to completing the survey.

The respondents were asked to indicate their levels of agreement or disagreement with eighteen statements in which underpaying taxes may be arguably more or less justified by ticking boxes from one to seven, where one equals *strongly agrees* and seven equals *strongly disagrees*. Since responses are Likert-type items, the recommended descriptive statistics is median and mode. In addition to the median and mode, we have also reported average value and standard deviation. We will based our discussion on the modal value (i.e. the most frequent answer) as the value of the median answers is

similar across all statements. The statements and the respective ranks and scores are reflected in Table 2.

Table 2: Combined Scores on Tax Morale of students before any tax tuition

(1 = strongly agrees; 7 = strongly disagrees)

Rank	Statement: <i>Please tell me for each of the following statements whether you think underpaying taxes is justifiable if...</i>	Mean Scores	S.D.	Median	Mode
6	... most of the money collected is spent wisely	4.11	1.76	4	3
9	... a large portion of the money collected is spent on projects that do benefit me	4.32	1.65	4	4
4	... a large portion of the money collected is spent on worthy projects	4	1.68	4	4
17	... tax rates are low	4.83	1.63	5	6
15	... it means that if I pay less, others will have to pay more	4.80	1.63	5	6
3	... the tax system is unfair	3.91	1.74	4	3
2	... the tax system is complex	3.81	1.83	4	4
7	... the risk of being caught is high	4.2	1.79	4	4
13	... the penalty for underpayment is low	4.59	1.65	4.5	4
5	... a large portion of the money collected is wasted	4.13	1.81	4	3
8	... a large portion of the money collected is spent on projects that do not benefit me	4.29	1.67	4	4
10	... a large portion of the money collected is spent on projects that I morally disapprove of	4.39	1.56	4	4
14	... the risk of being caught is low	4.72	1.54	5	4
12	... the penalty for underpayment is high	4.54	1.54	4	4
1	... tax rates are too high	3.82	1.66	4	4
11	... everyone is doing it	4.43	1.67	4	4

16	... the tax system is fair	4.9	1.55	5	4
18	... the tax system is simple	5.21	1.45	5	6

Most of the respondents somewhat agree with statements that cheating is justifiable when most of the money collected is wasted and when the system is unfair. These are the statements that correspond to the lowest modal values in Table 2. Tax morale of respondents is found to be highest presented with statements that underpaying tax is justified when it means that if I pay less, others will have to pay more, tax rates are low and the tax system is simple. These are the statements that corresponds to the highest median and modal values in Table 2.

A review of the literature (e.g. Alm and Torgler, 2006; Frey and Torgler, 2007; Daude, Gutierrez and Melguizo, 2013; Doerrenberg and Peichl, 2013) shows that tax morale varies among different groups with different socio-demographic and socio-economic characteristics such as gender, age, education and employment. This research focuses on the relationships of tax tuition and work experience to the tax morale of young people given the recognised importance of this demography to policy makers.

We use the Wilcoxon-Mann-Whitney⁶ test to see if there are any statistically significant differences between the underlying distributions of the tax morale scores between the different genders, employed⁷/never employed, cohorts with/without tax tuition and autumn/spring cohorts with tax tuition (performed in the latter case to provide some confirmation of results over a longitudinal basis as well as to enable us to explore a pre- and post- tax tuition comparison). Table 3 summarises the findings.

⁶ A nonparametric test for checking the equality of means on two independent samples (e.g. male vs. female).

⁷ Respondents are coded as 'employed' for this purpose if they had ever been involved in any employment even of a short duration

Table 3. Tax morale by different subgroups of the surveyed students

Statement: <i>Please tell me for each of the following statements whether you think underpaying taxes is justifiable if...</i>	Gender		Age		Cohort		Tax tuition		Employment		Tax return completed	
	Male	Female	18-20	Over 20	Without tax tuition	With (pre-) tax tuition	Pre-tuition	Post-tuition	Yes	No	Yes	No
	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)	Mean (median)
... most of the money collected is spent wisely.	3.93 (4)	4.24* (4)	4.16 (4)	4.03 (4)	4.29 (4)	3.93 (4)	3.93 (4)	4.05 (4)	4.18 *** (4)	3.31 (3)	4.12 (4)	4.08 (4)
... a large portion of the money collected is spent on projects that do benefit me.	4.06 (4)	4.45** (4)	4.29 (4)	4.23 (4)	4.68 (5)	4.08** (4)	4.08 (4)	4.11 (4)	4.33** (4)	3.66 (3)	4.20 (4)	4.26 (4)
... a large portion of the money collected is spent on worthy projects.	3.97 (4)	4.06 (4)	4.11 (4)	3.92 (4)	4.11 (4)	3.94 (4)	3.94 (4)	4.08 (4)	4.08** (4)	3.46 (3)	3.89 (5)	4.07 (5)
... tax rates are low	4.86 (5)	4.89 (5)	4.78 (5)	4.95 (5)	4.93 (5)	4.84 (5)	4.84 (5)	4.97 (5)	4.94** (5)	4.12 (4)	5.01 (5)	4.79 (5)
... it means that if I pay less, others will have to pay more	4.56 (5)	5.05*** (5)	4.85 (5)	4.76 (5)	4.9 (5)	4.62 (5)	4.62 (5)	4.84 (5)	4.87** (5)	4.2 (4)	4.67 (5)	4.85 (5)
... the tax system is unfair	3.56 (3)	4.14*** (4)	3.95 (4)	3.77 (4)	4.26 (4.5)	3.78* (4)	3.78 (4)	3.75 (4)	3.83 (4)	4.18 (4)	3.64 (4)	3.94 (4)
... the tax system is complex	3.74 (4)	3.89 (4)	3.95 (4)	3.68 (1)	3.93 (4)	3.84 (4)	3.84 (4)	3.86 (4)	3.81 (4)	3.97 (4)	3.54 (4)	3.94 (4)
... the risk of being caught is high	4.05 (4)	4.32 (4)	4.32 (4)	4.05 (4)	4.47 (4)	4.11 (4)	4.11 (4)	4.17 (4)	4.25 (4)	3.61 (4)	3.83 (4)	4.32 (4)
... the penalty for underpayment is low	4.33 (4)	4.84*** (5)	4.54 (4)	4.66 (5)	4.65 (4)	4.47 (4.5)	4.47 (4.5)	4.61 (5)	4.65*** (5)	4 (4)	4.65 (5)	4.58 (4)

... a large portion of the money collected is wasted	3.61 (3)	4.45*** (4)	4.18 (4)	3.89 (4)	4.46 (5)	4.09 (4)	4.09 (4)	3.82 (4)	4.04 (4)	4.12 (4)	4.13 (4)	3.79 (3.5)
... a large portion of the money collected is spent on projects that do not benefit me	4.03 (4)	4.48*** (4)	4.33 (4)	4.18 (4)	4.46 (5)	4.3 (4)	4.3 (4)	4.18 (4)	4.28 (4)	4.09 (4)	4 (4)	4.34 (4)
... a large portion of the money collected is spent on projects that I morally disapprove of	4.02 (4)	4.56*** (4)	4.57 (4)	4.12 (4)	4.7 (5)	4.32** (4)	4.32 (4)	4.02 (4)	4.34 (4)	3.94 (4)	4.21 (4)	4.34 (4)
... the risk of being caught is low	4.4 (4)	4.66*** (4)	4.56 (4)	4.75 (5)	4.93 (5)	4.57 (5)	4.57 (5)	4.45 (4)	4.66 (5)	4.51 (4)	4.63 (5)	4.65 (5)
... the penalty for underpayment is high	4.4 (4)	4.66 (4)	4.62 (4)	4.44 (4)	4.59 (4)	4.61 (4)	4.61 (4)	4.52 (4.5)	4.58* (4)	4.06 (4)	4.26 (4)	4.61 (5)
... tax rates are too high	3.56 (3)	4.05*** (4)	3.92 (4)	3.69 (4)	4.13 (4)	3.85 (4)	3.85 (4)	3.7 (4)	3.83 (4)	3.67 (3)	3.7 (4)	3.86 (4)
... everyone is doing it	4.23 (4)	4.61** (4)	4.31 (4)	4.57 (4.5)	4.69 (5)	4.34 (4)	4.34 (4)	4.44 (4)	4.47 (4)	4.06 (4)	4.38 (4)	4.47 (4)
... the tax system is fair	4.68 (5)	4.94 (5)	4.81 (5)	4.83 (5)	4.98 (5)	4.71 (5)	4.71 (5)	4.58 (4)	4.9*** (5)	3.97 (4)	4.75 (5)	4.85 (5)
... the tax system is simple	4.99 (5)	5.24 (6)	5.11 (5)	5.14 (5)	5.36 (6)	5.11 (5)	5.11 (5)	4.86 (5)	5.19** (6)	4.48 (4)	5.14 (5)	5.12 (6)

***p<0.01 **p<0.05; *p<0.10.

Gender differences

The majority of the statements exploring respondents' tax morale show statistically significant differences between female and male students, with female students intimating higher tax morale (i.e. higher mean scores) in all cases where these differences were significant. This is consistent with the literature (Alm and Torgler, 2006; Frey and Torgler, 2007; Daude et al., 2013). The seven statements where no statistically significant differences are detected includes the three of the four questions with the highest mean scores noted above (i.e. majority agree the tax system is not simple, is arguably more unfair than fair and the rates are not too low).

On average, females tend to report higher levels of tax morale (Table 3). There is a statistically significant difference by gender in responses to statements about the way collected money is spent (whether cheating is justifiable when the money is spent wisely or is wasted, is spent on worthy projects or projects that do or don't benefit respondents, etc). Women respondents also appear to be less concerned with actions of others as they find less justification for cheating even if everyone is doing it or if it means that if they pay less, others will have to pay more. Furthermore, women tend to disagree more with statements claiming that cheating is justified when penalties and risk of being caught is low, and the tax system is unfair.

However, responses to most statements related to the characteristics of tax system itself (whether cheating is justifiable when the tax system is fair, simple/complex or the tax rates are low) do not significantly differ by gender.

Tax taught v non-tax taught cohorts

A key focus of our study was related to whether undertaking tax tuition as a university course influenced the opinions of our respondents. As Table 3 shows, only three of the eighteen statements have been answered significantly differently between those who had completed at least one tax course and those who had not had any tax tuition.

Specifically, students enrolled on tax tuition courses claim more justification to underpay taxes (i.e. cheat) when the tax system is considered by them to be unfair or money is spent on projects with which they morally disprove.

With respect to the students surveyed in this study, the tax tuition cohort appear to have lower tax morale than students on non-tax tuition cohorts. This is even the case when asked their opinions on underpaying when the tax money is spent on projects from which they directly benefit.

Pre/post tax tuition differences

The answers derived from the cohorts after receiving tax tuition do not differ statistically from pre/no-tax tuition cohorts. This intimates that the level of tax morale has not measurably improved (or decreased) as a result of improved tax literacy. This is contrary to the results presented by Eriksen and Fallan (1996), Goksu and Sahpaz (2015) and Wong and Lo (2015).

Employment experience

Nine of the eighteen statements on tax morale show statistically significant differences with the respondents in employment demonstrating that higher levels of tax morale were to be found in those without employment experience. The statements in which these differences are detected are the questions which are positively framed (i.e. money collect is spent wisely, the tax system is fair, etc.) and regardless of penalties being high or low.

Employment effects on opinions of the structure and nature of UK tax system

As researchers, we were particularly intrigued by the employment-related results in our univariate analysis – that potentially implied that some employment experience appears to be correlated to lower tax morale in comparable groups of similarly aged young adults who were, at the time of the study, in full time education. While our chosen quantitative research methodology could not indicate in itself whether this was a causal relationship (or in which direction this may have been causal), we wanted to explore this further to better understand what may be driving this correlation.

To explore further the specific relationship between employment and tax morale that the univariate results produced, we undertook further analysis. In addition to the 18 questions asked of our respondents on their opinions of when underpaying of taxes might be justified, the students were also asked to consider three directed statements about the structure and nature of the UK's individual personal tax system (i.e. that part of the tax system most directly related to taxes paid on employment). They were asked to grade the extent to which they agreed or disagreed whether, again using a 7-point Likert scale, the UK tax system was (1) fair, (2) simple and (3) the rates of tax are low.

We then tested whether an average response on these three statements significantly differs with respect to whether or not the respondents were employed. In so doing we sought to explore whether employment experience would be positively/negatively associated with higher tax morale) – specifically seeking to confirm and delve more deeply into the apparent failure to confirm this hypothesis the univariate analysis had demonstrated in half of the survey’s 18 statements. The univariate results from this analysis are presented in Table 4.

Table 4. Personal perspectives on UK tax administration

Statements regarding the UK Tax System	Status	Mean	Standard Deviation	Median	p-value
The tax system is fair	Employed	4.02	1.45	4	0.0022
	Never employed	3.18	0.98	3	
The tax system is simple	Employed	4.24	1.46	4	0.0374
	Never employed	3.69	1.24	4	
The tax rates are low	Employed	4.71	1.29	5	0.0009
	Never employed	4.03	0.95	4	

With p-values of much less than 10% in each case, as reflected in the above table, statistically significant differences were found when there was consideration for students’ work experience in each of these questions. In each case those who had had at least some experience of employment were shown to also be more likely⁸ to believe the tax system was unfair, complex and that tax rates were not low, relative to a comparable cohort who had not had any employment experience. Again,

⁸ The means are higher and differences were statistically significant with $p < 0.1$ in all cases and below $p < 0.01$ in two of the three cases

we recognise this research approach does not give confirmation of causality to enable us to say if the employment experience itself actually created these results.

3.3. Model

In addition to the univariate analysis, we wanted to try to make an inference of any causal relationship that may exist between tax morale and its constitute determinants. Our review of the prior literature identified various potential determinants for this examination. In this study, we are particularly interested in the effect of tax education on tax morale and moreover, whether that effect is conditional on the students' work experience (as proxied by employment). When the effect of one independent variable on the dependent variable depends on the value of the other independent variable, the line of causation is known as 'moderated causal relationships'. On this basis, we undertook testing in which employment was hypothesized to moderate the relationship between education and tax morale. Moderated relationships are captured by introducing interaction terms between independent variables in the model.⁹ To do this we have sought to examine the interaction between tax education and employment using the model below (utilising multivariate modelling).

$$\begin{aligned}
 Tax\ morale_i = & \beta_0 + \beta_1 Tax\ Eductation_i + \beta_2 Employment_i + \beta_3 (Tax\ Education_i * \\
 & Employment_i) + \beta_4 Age_i + \beta_5 Female_i + \beta_6 UK_i + \beta_7 Marital\ status_i + \\
 & \beta_8 White_i + \beta_9 Religiosity_i + \beta_{10} Trust_{UK\ gov}_i + \varepsilon_{i,t}
 \end{aligned} \tag{1}$$

The dependent variable (*Tax morale_i*) is calculated as a composite index from a factor analysis on the eighteen questions assessing tax morale as adopted from McGee (2006) and Wong and Lo (2015), outlined above. According to the results of both Kaiser and scree test, all the indicators

⁹ The interaction is introduced in the model as multiplicative term between moderated variables.

were loaded on one distinct factor with factor loadings of more than 0.6, and this factor can therefore be said to represent a composite index measuring tax morale of the respondents.¹⁰

The first set of independent variables are the main variables of interest: *Tax Education_i* representing an indicator of received tax tuition; *Employment_i* as a binary variable indicating whether or not the student has current and/or past employment; and their interaction (*Tax Education_i * Employment_i*). In this case, the coefficient on tax education (β_1) reflects the effect of tax tuition when the employment is zero (i. e. student has never been employed) and the sum $\beta_1 + \beta_3 * (Employment_i)$ reflects the effect of tax tuition on students that are employed either currently or have been so at some point in the past (i.e. employment is equal to 1). Similarly, the coefficient of employment (β_2) captures the effect of employment on tax morale when students did not have tax education (tax education=0). Further, the model includes the socio-demographic characteristics of the respondents as controls: age, gender, citizenship, marital status, ethnicity.¹¹ Finally, we also control for societal factors and personal beliefs such as a respondent's trust in government and religiosity.¹²

4. Estimated results

The estimated results of our multivariate analysis (1) are summarised in Table 5.

¹⁰ For a more detailed explanation on the execution of factor analysis see Alexander and Balavac-Orlic (2022).

¹¹ Age is measured as the respondent's age; gender, ethnicity and citizenship are included as dummy variables (= 1 if a respondent is female, UK and white, respectively; zero otherwise), while marital status is included as categorical variable with categories married, separated/divorced/widowed in comparison to single (reference group).

¹² Respondents were asked to indicate personal trust in UK government on a scale from 1 (very untrustworthy) to 10 (very trustworthy). The variable (government trust) is included in the model as a dummy variable taking a value of 1 if answer is greater than 5, and zero otherwise. Religiosity is measured as a dummy variable taking a value of 1 if respondent is consider themselves as religious, and zero otherwise.

Table 5. Estimated Results of Model (1)

VARIABLES	(1) OLS TM_total	(2) Ordered logit Spent wisely	(3) Ordered logit Project benefited	(4) Ordered logit Worthy projects	(5) Ordered logit Others pay more	(6) Ordered logit Project not benefited
Age	-0.142 (0.209)	-0.283 (0.220)	-0.123 (0.232)	-0.366 (0.234)	-0.08256 (0.219)	-0.120 (0.245)
Over 25	-0.099 (0.407)	0.219 (0.483)	0.419 (0.525)	0.339 (0.438)	-0.44118 (0.454)	-0.996 (0.660)
Female	0.571*** (0.177)	0.291 (0.190)	0.349* (0.193)	0.111 (0.192)	0.55109*** (0.199)	0.513*** (0.190)
UK	0.612*** (0.225)	0.709*** (0.247)	0.979*** (0.307)	0.724*** (0.279)	0.74585** (0.320)	0.131 (0.271)
<i>Marital status</i>						
Married	-0.074 (0.468)	0.24288 (0.571)	0.47273 (0.769)	0.28453 (0.702)	0.01855 (0.504)	0.28597 (0.534)
Other (Separated, Widowed, Divorced)	0.072 (0.824)	0.68396 (1.079)	0.81523 (1.528)	-1.49331 (0.974)	0.79964 (0.576)	0.61801 (1.440)
White	0.389** (0.197)	0.21829 (0.242)	0.13872 (0.264)	0.13938 (0.242)	0.02117 (0.267)	0.50617** (0.257)
Religious	-0.125 (0.215)	-0.42787 (0.261)	-0.45404* (0.247)	-0.42648* (0.235)	-0.23797 (0.277)	0.33919 (0.268)
Trust_UKgov	-0.316* (0.178)	-0.30089 (0.197)	-0.36763* (0.198)	-0.26247 (0.196)	-0.27089 (0.198)	-0.04708 (0.205)
Course_taxtution_spr	0.925*	2.27246***	1.56996***	2.02686***	1.36284**	1.10018**

	(0.513)	(0.601)	(0.557)	(0.630)	(0.663)	(0.554)
Employment	0.354	1.41370***	0.84986**	1.04896**	0.87788**	0.55566
	(0.367)	(0.452)	(0.369)	(0.460)	(0.407)	(0.416)
Course_taxtution_spr#Employment	-0.949*	-2.2601***	-1.717***	-1.795***	-1.284*	-1.219**
	(0.535)	(0.625)	(0.592)	(0.654)	(0.701)	(0.567)
Constant	4.788***					
	(0.412)					
Observations	312	364	365	362	355	357
R-squared	0.12					

A composite index measurement of the level of tax morale is estimated by the ordinary least square method (OLS)¹³ (Column 1 in Table 5). Diagnostic tests for OLS (test for correct functional form, heteroscedasticity, normality and multicollinearity) show that our model is well-specified. We have also controlled for the sensitivity of our findings by measuring the tax morale with separate 7-point Likert scaled questions. Given the ordinal nature of these variables, an ordered logit estimation method has also been carried out (Columns 2-6 in Table 4). Since both OLS and ordered logit estimates are very similar, only OLS estimates (Column 1 in Table 5) will be discussed below.

Therefore, to explore whether the influence of tax tuition on tax morale depends on the employment history of students, we estimate their interaction (Course_taxtution_spr#Employment). As the results in Table 5 show, the interaction is statistically significant in all specifications ($p < 0.1$). This shows that the effect of tax tuition on tax morale is conditional on the individual's employment status. The coefficient for tax-course-enrolment (Course_taxtution_spr#) measures the influence of enrolment on tax morale only for students *without* an employment history (i.e. when Employment=0). The effect of tax tuition on tax morale for students *with* employment history (i.e.

¹³ OLS estimation method is used considering that a composite index is a continuous quantitative variable.

when Employment=1) is then considered by estimating the coefficient of the interaction term. The estimated coefficient of tax-course-enrolment is positive revealing that tuition increases the tax morale of students without employment histories ($\beta = 0.925, p < 0.1$). However, a negative coefficient on the interaction term shows the effect of tax-course-enrolment diminishes for students with current or previous employment ($\beta = -0.949, p < 0.1$).

Our empirical findings indicate the impact of tax tuition on tax morale might be better understood if the employment history of a student is considered jointly with tax tuition. These results may suggest that young people will not fully appreciate taxation in theory until they personally engage with the income tax system. As such, both first-hand experience of the tax system (as an income tax payer, not just a VAT payer) and tax tuition taken together may produce a negative compliance outcome that tax tuition alone does not produce.

Rodriguez-Justicia and Theilen (2018) find that education levels have a positive influence on tax morale when the participant is a net beneficiary of the direct benefits and is negatively associated when the participant pay in more than get out. Therefore, it is interesting to note that when our student participants enter the world of work and pay income taxes we may observe that they behave as net contributors do. This 2018 study suggests that each individual has a ‘psychological contract’ with the state, where some personal benefits are realised from taxation. Therefore, net beneficiaries may have a higher tax morale (i.e. motivation for tax compliance).

The findings for the effects of the control variables in our study are in line with findings in the literature. Female, UK residents and white respondents report higher levels of tax morale than their male, non-UK residents and non-white counterparts (i.e. consistent with Alm and Torgler, 2006; Frey and Torgler, 2007; Daude et al., 2013). Age and marital status do not have a statistically

significant influence as expected in this sample, given the minor variation in the age and marital structure.

5. Conclusions

The research described in this paper sought to explore the linkages between tax education and tax morale, specifically targeting young adults in the process of completing higher education and (in many cases, albeit not all) joining the workforce on a more full-time basis. This is a domain and subject group that several prior studies have explored, perhaps not unsurprisingly given the critical life change this move creates, from primarily being substantially engaged with education into being primarily a member of the workforce. As such, many of these individuals are likely to be about to become income tax payers, potentially for the first time. However, prior studies have not looked at whether prior employment / income tax paying experience may have an effect on the way tax education then influenced tax morale.

The results of this research show that gender, employment experience and tax tuition all influence tax morale. Consistent with the literature, female respondents tend to have higher tax morale (i.e. are on average more willing to pay taxes due) in comparison to the male respondents. Those respondents that had employment experience tended to have a higher level of tax morale in comparison to those without employment experience. There is a general perception that the UK individual tax system is fair, but complex and the rates are too high. This perception is particularly strong for those in employment.

The research further shows students with higher levels of tax tuition have higher levels of tax literacy. However, the researchers were unable to conclude whether enhanced tax awareness /

literacy gained via tax tuition resulted in enhanced tax morale. Further research on the causation between tax awareness / literacy and tax morale is necessary to draw such inferences.

The moderating effect of work experience on tax tuition to tax morale of university students has yet to be considered in the literature. Following the initial part of our research, we were intrigued by the employment-related results in our univariate analysis which potentially implied that having had some employment experience appears to be correlated to lower tax morale in comparable groups of similarly aged young adults in full time education. As we were unable to establish whether this was a causal relationship (or in which direction this may have been causal), we undertook further research using multivariate analysis to explore and better understand what may be driving the correlation.

The findings from this research, as reflected in Table 5, are students with tax education *and* employment experience have reduced levels of tax morale. Our research shows the impact of tax tuition on tax morale is influenced by work experience, suggesting young people will not fully appreciate taxation in theory until they personally engage with the income tax system. Our findings are consistent with Rodriguez-Justicia and Theilen (2018) who found education to have a negative impact on tax morale for net contributors to direct benefits. This is an area that warrants further research as it poses interesting challenges for those engaged in tax education if it is creating these unexpected effects on tax morale in some of those who they are seeking to teach.

This research is subject to a number of limitations. First, the data has been extracted from relatively small cohorts of students from two UK universities and the conclusions therefore may not be generalisable, even to students of a similar age. Second, tax morale and tax compliance behaviour have been measured using subjective survey ratings. This raises reliability concerns as these

findings could be prone to measurement error. Further, previous studies question the validity of survey instruments due to limited numbers of constructs. We partly address this concern by including a sizable number of constructs.

The results from this research suggest that there is more that could be done in developing taxpayer education. Taxpayer compliance and morale may be positively influenced by widely disseminating foundational tax education early and then reinforcing and further developing knowledge at later life-stages. However, the potential for this to decrease rather than increase voluntary compliance is a conundrum that is reflected in this research as elsewhere, and is a concern that further research may seek to address.

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